

Appl. No. 10 731 757

Amdt. dated November 25, 2005

Reply to Office action mailed May 24, 2005

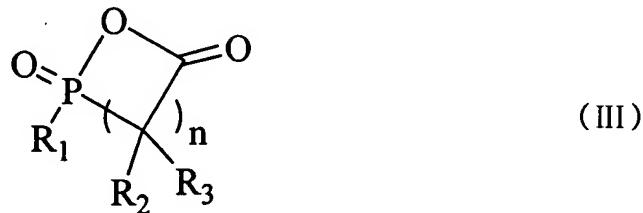
AMENDMENTS TO THE SPECIFICATION

Please replace the first paragraph beginning at page 1 with the following rewritten paragraph:

— This application is a continuation-in-part of International Application No. PCT /KR01/02261 filed December 26, 2001, published in English under PCT Article 21(2) and now abandoned and a continuation-in-part of International Application No. PCT /KR01/02262 filed December 26, 2001, published in English under PCT Article 21(2) and now abandoned. This application is also a continuation-in-part of Serial No. 10/223,450 filed August 19, 2002, now U.S. 6,900,256, which is a continuation of Serial No. 09/ 997,781, filed November 28, 2001, now U.S. 6,576,161, which is a continuation-in-part of Serial No. 09/752,814 filed December 29, 2000, now U.S. 6,437,029. —

Please replace three paragraphs beginning at page 6, line 19 to page 7, line 11 with the following three rewritten paragraphs:

— Oxaphosphorane Compound Oxaphospholane Compound: The oxaphosphorane oxaphospholane compound is represented by the following chemical Formula (III):



where R₁ is hydrogen, alkyl of C₁₋₆, or aryl of C₆₋₁₅, R₂ and R₃ are hydrogen or alkyl of C₁₋₆, and n is in the range of 1 to 3.

The preferable examples of the oxaphosphorane oxaphospholane compound are 2-methyl-2, 5-dioxo-1-oxa-2-phosphorane 5-dioxo-1-oxa-2-phospholane and 2-phenyl-2, 5-dioxo-1-oxa-2-phosphorane 2-phenyl-2, 5-dioxo-1-oxa-2-phospholane. The oxaphosphorane oxaphospholane compounds are used in single or in combination.

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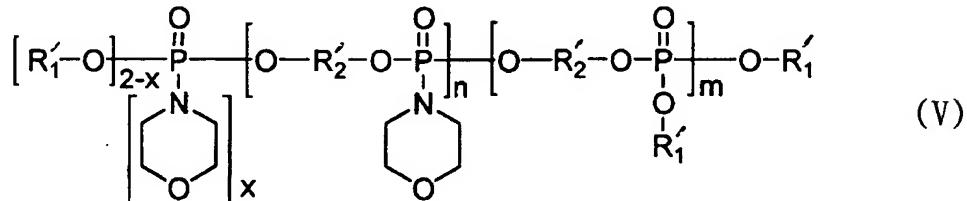
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The oxaphospholane compounds are known in the art as in U.S. Patent No. 5,334,769, herein incorporated by reference. Rubber modified styrene-containing resin composition containing oxaphosphorane oxaphospholane compounds flame retardants are disclosed in commonly assigned Serial No. 10 231,448, now U.S. 6,900,256, herein incorporated by reference. —

Please replace the two paragraphs beginning at page 8, line 5 to line 18 with the following two rewritten paragraphs:

— Phosphoric Acid Ester Morpholide Compound: The phosphoric acid ester morpholide compound is represented by the following chemical Formula (V):



where \underline{R}_1 \underline{R}'_1 is a C_{6-20} aryl group or an alkyl-substituted C_{6-20} aryl group, \underline{R}_2 \underline{R}'_2 is a C_{6-30} aryl group or an alkyl-substituted C_{6-30} aryl group, x is 1 or 2, and n and m are number average degree of polymerization and n+m is 0 to 5. In Formula (V), preferably \underline{R}_1 \underline{R}'_1 is a phenyl group or an alkyl-substituted phenyl group where the alkyl is methyl, ethyl, isopropyl, t-butyl, isobutyl, isoamyl or t-amyl, preferably methyl, ethyl, isopropyl or t-butyl, and \underline{R}_2 \underline{R}'_2 means preferably a C_{6-30} aryl group or an alkyl-substituted C_{6-30} aryl group which is a derivative from resorcinol, hydroquinone or bisphenol-A. —

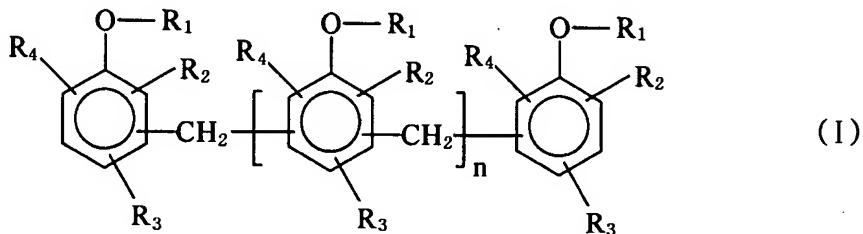
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Claims 1-3, 6-13, 16-18 and newly presented claims 19-26 are pending and under consideration. This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (original). A flame retardant thermoplastic resin composition comprising:

- (A) 100 parts by weight of a thermoplastic resin as a base resin;
- (B) about 0.1~100 parts by weight of a phenol resin derivative represented by the following Formula;



where R₁ is alkyl of C₁₋₃₄; aryl; alkyl-substituted aryl; O-, N-, P- or S-containing alkyl; O-, N-, P- or S-containing aryl; or O-, N-, P- or S-containing alkyl-substituted aryl; R₂, R₃, and R₄ are hydrogen, alkyl of C₁₋₃₄; aryl; alkyl-substituted aryl; O-, N-, P- or S-containing alkyl; O-, N-, P- or S-containing aryl; or O-, N-, P- or S-containing alkyl-substituted aryl; and n is an integer of 1 to 10,000; and

- (C) about 1~50 parts by weight of a phosphoric acid ester morpholide compound.

Claim 2 (original). The flame retardant thermoplastic resin composition as defined in claim 1, wherein said base resin is selected from the group consisting of polyacrylonitrile-butadiene-styrene copolymer (ABS resin), rubber modified polystyrene resin (HIPS),

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acrylonitrile-styrene-acrylate copolymer (ASA resin), methacrylate-butadiene-styrene copolymer (MBS resin), acrylonitrile-ethacrylate-styrene copolymer (AES resin), polycarbonate (PC), polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET), polybutylene terephthalate (PBT), polyvinyl chloride (PVC), polymethyl methacrylate (PMMA), polyamide (PA), and a copolymer thereof and an alloy thereof.

Claim 3 (original). The flame retardant thermoplastic resin composition as defined in claim 1, wherein said phenol resin derivative is selected from the group consisting of o-cresol novolak epoxy resin, phenol epoxy resin and a mixture thereof.

Claim 4 (canceled)

Claim 5 (canceled)

Claim 6 (**currently amended**). The flame retardant thermoplastic resin composition as defined in claim 1, further comprising an additive ~~selected from the group consisting of~~ comprising an impact modifier, a heat stabilizer, an oxidation inhibitor, a light stabilizer, ~~and~~ ~~an inorganic filler such as talc, silica, mica, glass fiber, an organic or inorganic pigment and/or~~ dye up to about 50 parts by weight as per 100 parts by weight of the base resin.

Claim 7 (original). A molded article prepared by the flame retardant thermoplastic resin composition of claim 1.

Claim 8 (original). A molded article prepared by the flame retardant thermoplastic resin composition of claim 4.

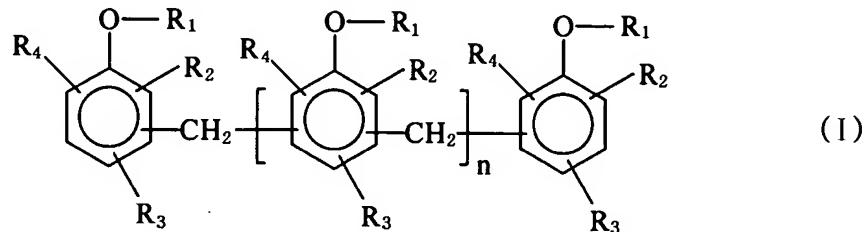
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Claim 9 (original). A flame retardant thermoplastic resin composition comprising:

- (A) 100 parts by weight of a thermoplastic resin as a base resin;
- (B) about 0.1~100 parts by weight of polyphenylene ether;
- (C) about 0.1~100 parts by weight of a phenol resin derivative represented by the following Formula (I);



where R_1 is alkyl of C_{1-34} ; aryl; alkyl-substituted aryl; O-, N-, P- or S-containing alkyl; O-, N-, P- or S-containing aryl; or O-, N-, P- or S-containing alkyl-substituted aryl; R_2 , R_3 , and R_4 are hydrogen, alkyl of C_{1-34} ; aryl; alkyl-substituted aryl; O-, N-, P- or S-containing alkyl; O-, N-, P- or S-containing aryl; or O-, N-, P- or S-containing alkyl-substituted aryl; and n is an integer of 1 to 10,000; and

- (D) about 0.1~50 parts by weight of a phosphoric acid ester morpholide compound.

Claim 10 (original). The flame retardant thermoplastic resin composition as defined in claim 9, further comprising up to about 5.0 parts by weight of an anti-dripping agent based on 100 parts by weight of the base resin.

Claim 11 (original). The flame retardant thermoplastic resin composition as defined in claim 10, wherein said anti-dripping agent is a fluoride resin.

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Claim 12 (original). The flame retardant thermoplastic resin composition as defined in claim 9, wherein said base resin is selected from the group consisting of polyacrylonitrile-butadiene-styrene copolymer (ABS resin), rubber modified polystyrene resin (HIPS), acrylonitrile-styrene-acrylate copolymer (ASA resin), methacrylate-butadiene-styrene copolymer (MBS resin), acrylonitrile-ethacrylate-styrene copolymer (AES resin), polycarbonate (PC), polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET), polybutylene terephthalate (PBT), polyvinyl chloride (PVC), polymethyl methacrylate (PMMA), polyamide (PA), and a copolymer thereof and an alloy thereof.

Claim 13 (original). The flame retardant thermoplastic resin composition as defined in claim 9, wherein said phenol resin derivative is selected from the group consisting of o-cresol novolak epoxy resin, phenol epoxy resin and a mixture thereof.

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (**currently amended**). The flame retardant thermoplastic resin composition as defined in claim 10, further comprising an additive ~~selected from the group consisting of~~ comprising an impact modifier, a heat stabilizer, an oxidation inhibitor, a light stabilizer, ~~and an inorganic filler such as~~ talc, silica, mica, glass fiber, an organic or inorganic pigment and/or dye up to about 50 parts by weight as per 100 parts by weight of the base resin.

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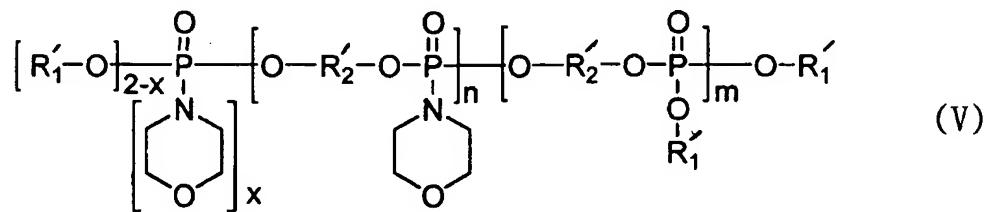
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Claim 17 (original). A molded article prepared by the flame retardant thermoplastic resin composition of claim 9.

Claim 18 (original). A molded article prepared by the flame retardant thermoplastic resin composition of claim 14.

Claim 19 (new). The flame retardant thermoplastic resin composition as defined in claim 1, wherein said phosphoric acid ester morpholide compound is represented by the following Formula:



where R'_{1} is a C_{6-20} aryl group or an alkyl-substituted C_{6-20} aryl group, R'_{2} is a C_{6-30} aryl group or an alkyl-substituted C_{6-30} aryl group, x is 1 or 2, and n and m are number average degree of polymerization and $n+m$ is 0 to 5.

Claim 20 (new). The flame retardant thermoplastic resin composition as defined in claim 19 wherein x is 1.

Claim 21 (new). The flame retardant thermoplastic resin composition as defined in claim 19, where R'_{1} is phenyl group or an alkyl-substituted phenyl group, where the

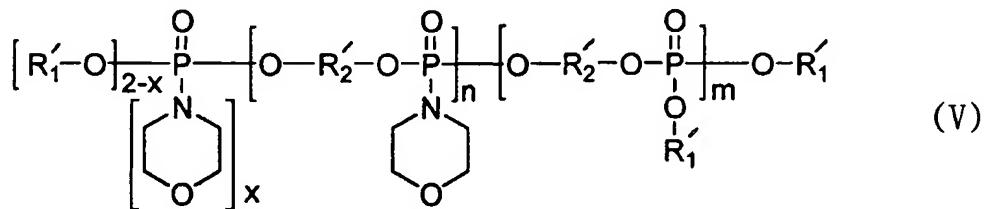
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alkyl is methyl, ethyl, isopropyl, t-butyl, isoamyl or t-amyl and R'₂ is a C₆₋₃₀ aryl group or an alkyl-substituted C₆₋₃₀ aryl group which is a derivative from resorcinol, hydroquinone, or bisphenol-A.

Claim 24 (new). The flame retardant thermoplastic resin composition as defined in claim 9, wherein said phosphoric acid ester morpholide compound is represented by the following Formula (V):



where R'₁ is a C₆₋₂₀ aryl group or an alkyl-substituted C₆₋₂₀ aryl group, R'₂ is a C₆₋₃₀ aryl group or an alkyl-substituted C₆₋₃₀ aryl group, x is 1 or 2, and n and m are number average degree of polymerization and n+m is 0 to 5.

Claim 25 (new). The flame retardant thermoplastic resin composition as defined in claim 24 wherein x is 1.

Claim 26 (new). The flame retardant thermoplastic resin composition as defined in claim 24, where R'₁ is phenyl group or an alkyl-substituted phenyl group, where the alkyl is methyl, ethyl, isopropyl, t-butyl, isoamyl or t-amyl and R'₂ is a C₆₋₃₀ aryl group or an alkyl-substituted C₆₋₃₀ aryl group which is a derivative from resorcinol, hydroquinone, or bisphenol-A.